

MICROPOROUS PVDF FILMS AND METHOD OF MANUFACTURING

ABSTRACT OF THE DISCLOSURE

Shaped microporous articles are produced from polyvinylidene fluoride (PVDF) and nucleating agents using thermally induced phase separation (TIPS) processes. The shaped microporous article is oriented in at least one direction at a stretch ratio of at least approximately 1.1 to 1.0. The shaped article may also comprise a diluent, glyceryl triacetate. The shaped microporous article may also have the micropores filled with a sufficient quantity of ion conducting electrolyte to allow the membrane to function as an ion conductive membrane. The method of making a microporous article comprises the steps of melt blending polyvinylidene fluoride, nucleating agent and glyceryl triacetate; forming a shaped article of the mixture; cooling the shaped article to cause crystallization of the polyvinylidene fluoride and phase separation of the polyvinylidene fluoride and glyceryl triacetate; and stretching the shaped article in at least one direction at a stretch ratio of at least approximately 1.1 to 1.0.